

Hypertension Update

Controversies in the Management of Hypertension

The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC-7) offered evidence-based approaches for the prevention and management of hypertension (HTN). But debate continues about optimum strategies as HTN continues to be redefined. Highlights from a plenary session look at two key concerns.

Implications of the JNC 7 BP Category “Prehypertension.”

Only 30% of Americans have blood pressures less than 140/90, which led to the creation of a new JNC 7 category—prehypertension—defined as SBP between 120-139 and DBP of 80-89.

“Is drug therapy an appropriate option for prehypertension?” asked William C. Cushman, MD, University of Tennessee School of Medicine at Memphis. Dr. Cushman reviewed findings from the HOT Study, which showed benefit in lowering DBP to 82.6 mm/Hg. Other clinical trials also suggest that “lower is better.”

JNC 7 describes prehypertension as a “designation ... to identify individuals at high risk of developing hypertension, so that both patients and clinicians are encouraged to intervene.”

Prehypertension is “not an indication for treatment, per se,” said Dr. Cushman. “At least not yet. But it does carry significant predictive value for development of hypertension and CV events.”

Hypertension in the Elderly. Should we be aggressive in treating hypertensive patients older than 80 years? “Yes—but with caveats,” said Marvin Moser, MD, Yale University School of Medicine, New Haven, CT.

“Hypertension starts higher and goes higher in elders,” Dr. Moser said. “But this doesn’t mean we should aggressively treat hypertension in each and every elderly patient.”

Dr. Moser noted this patient population is variable in general health and almost always presents in a context of comorbidities—as well as a range of capacities in daily living.

“Drug treatment is only part of the picture,” Dr. Moser said, advising less emphasis on mortality and morbidity and more on quality of life. “Stress lifestyle changes. Start with a low-dose diuretic. Add an ACEI, ARB, CCB, or beta blocker if you need to. But if your patient complains about side effects, stop, look, and listen. Don’t just insist they stay on the medicine. When managing the elderly, look at the whole picture.”

LVH Regression in Hypertension: Emerging Issues

The LIFE study offered compelling evidence that LVH regression is associated with improved cardiovascular outcomes. Is LVH regression an independent marker in the management of hypertension or other coronary syndromes? Seminar highlights look at two critical perspectives.

LVH Regression to Stratify Risk. Kristian Wachtell, MD, PhD, of the Copenhagen County University Hospital in Gostrup, Denmark, said “we should measure LV structure and function to stratify risk.” Dr. Wachtell reviewed data from the LIFE study, where patients with moderate hypertension and LVH were randomized to receive losartan versus atenolol. Both LVH and LV mass index decreased throughout the study, reductions “strongly linked to reduced CV morbidity and mortality, independent of randomization, the severity of baseline LVH, or baseline and on-treatment BP,” according to Dr. Wachtell. “These data tell us that LVH regression independently predicts improved outcomes.”

Does Lowered BP Drive LVH Regression? “Is it simply lowering BP that leads to LVH regression, or is the relationship drug-dependent?” asked Bjorn Dahlöf, MD, PhD, of the Sahlgrenska University Hospital in Goteborg, Sweden. “In some studies a greater reduction in LV mass was seen in one or the other treatment arm. So we might conclude the effect is specific to the drug used.” But Dr. Dahlöf cautioned that studies to date use intermittent office-based brachial BP readings, “which correlate less with LVM as compared to ambulatory blood pressure monitoring.”

The LIFE study “offered breakthrough insights,” Dr. Dahlöf

said, notably that “LVH and LV mass reduction are associated with improved outcomes for all CV endpoints. But LIFE did what every good study does: calls for further research to address new questions.” For example, “although losartan performed better than atenolol, more than half of LIFE participants were on at least one additional antihypertensive. Was LVH regression linked to losartan alone? Or will a combination of agents offer a better result? We look forward to research to come.”

CAFE Study: Blood Pressure Varies Based on Where and How It’s Measured

“Getting a blood pressure check” has always meant inflating a cuff on the arm just above the elbow and measuring the fall in pressure at the brachial artery. A new study suggests that’s only one window on blood pressure—and not always the best one.

Antihypertensive drugs that reflect lowered pressures when measured in the arm appear to have different effects on the circulation near the heart, according to Bryan Williams, MD, professor of medicine in the department of cardiovascular sciences at the University of Leicester, UK, and principal investigator for the Differential Impact — Principal Results of the Conduit Artery Function Evaluation (CAFE) Study, a sub-study of 2,199 people from the nearly 20,000-person Anglo-Scandinavian Cardiac Outcomes Trial (ASCOT).

ASCOT, one of the largest studies of hypertension ever conducted in Europe, assessed amlodipine plus perindopril against atenolol and a thiazide diuretic. The amlodipine/perindopril arm demonstrated significantly better CV endpoints. CAFE participants were recruited from among ASCOT participants.

In CAFE, investigators used a software application that measures central aortic systolic blood pressure based on reading the radial pulse wave contour. This information is then computed to extrapolate central pulse pressure measurements in the large arteries of the body. “The CAFE Study indicates that the shape of the pulse wave is influenced by the treatments we use to lower blood pressure,” said Dr. Williams. “Treatment with amlodipine had more favorable



effects on the pulse wave and pressures in the main arteries than did treatment based on atenolol.”

Of note is that the brachial arm blood pressure readings were essentially the same whether the antihypertensive agent used was the calcium channel antagonist or beta-blocker.

In finding that amlodipine reduced central aortic pressure by 4.3 mm Hg as compared with atenolol, CAFE may take a step further in explaining differences seen in ASCOT—where amlodipine plus perindopril demonstrated greater efficacy in reducing both BP and CV events.

A further implication of this observation is that brachial blood pressure measurement underestimated the effectiveness of amlodipine in comparison to atenolol—a fact that could mislead clinicians who must make treatment decisions.

In CAFE, researchers noted that while brachial blood pressures were essentially equal in the treatment groups, there were reductions in average central aortic pressure values favoring amlodipine. “The assumption has been that all types of blood pressure treatments are equally effective. We show that this is untrue,” Dr. Williams said.

Dr. Williams reported that “CAFE demonstrates for the first time in a large clinical outcomes trial that blood pressure-lowering drugs have profoundly different effects on central aortic pressures and hemodynamics, despite a similar impact on brachial blood pressure. The results of this study are clear-cut, dramatic and potentially very important. It also may explain why certain types of hypertension treatment might be more effective than others.”